

Product Overview

FCP125N65S3R0: Power MOSFET, N-Channel, SUPERFET® III, Easy Drive, 650 V, 24 A, 125 mΩ, TO-220

For complete documentation, see the data sheet.

SUPERFET III MOSFET is ON Semiconductor's brand-new high voltage super-junction (SJ) MOSFET family that is utilizing charge balance technology for outstanding low on-resistance and lower gate charge performance. This advanced technology is tailored to minimize conduction loss, provide superior switching performance, and withstand extreme dv/dt rate. Consequently, SUPERFET III MOSFET Easy drive series helps manage EMI issues and allows for easier design implementation.

Features

- 700 V @ $T_J = 150\text{ }^{\circ}\text{C}$
- Low Effective Output Capacitance (Typ. $C_{oss}(\text{eff.}) = 439\text{ pF}$)
- Ultra Low Gate Charge (Typ. $Q_g = 46\text{ nC}$)
- Optimized Capacitance
- 100% Avalanche Tested
- RoHS Compliant
- Typ. $R_{DS}(\text{on}) = 105\text{ m}\Omega$
- Internal Gate Resistance: 0.5 Ω

Benefits

- Higher system reliability at low temperature operation
- Low switching loss
- Low switching loss
- Lower peak V_{ds} and lower V_{gs} oscillation

Applications

- Telecommunication
- Cloud system
- Industrial

End Products

- Telecom power
- Server power
- EV charger
- Solar / UPS

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Channel Polarity	Configuration	$V_{DSS}(\text{Min})$ (V)	$V_{GS}(\text{Max})$ (V)	$V_{GS}(\text{th Max})$ (V)	$I_D(\text{Max})$ (A)	$P_D(\text{Max})$ (W)	$R_{DS}(\text{on}) \text{ Max @ } V_{GS} = 2.5\text{ V}$ (m Ω)	$R_{DS}(\text{on}) \text{ Max @ } V_{GS} = 4.5\text{ V}$ (m Ω)	$R_{DS}(\text{on}) \text{ Max @ } V_{GS} = 10\text{ V}$ (m Ω)	$Q_g \text{ Typ @ } V_{GS} = 4.5\text{ V}$ (nC)	$Q_g \text{ Typ @ } V_{GS} = 10\text{ V}$ (nC)	$C_{iss} \text{ Typ}$ (pF)	Package Type
FCP125N65S3R0	1.4165	Pb-free Halide free non AEC-Q and PPAP	Active	N-Channel	Single	650	30	4.5	24	181	-	-	125	-	46	1940	TO-220-3

For more information please contact your local sales support at www.onsemi.com.

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